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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,586	09/04/2003	Yu-Lien Huang	67,200-1133	7926
7590 TUNG & ASSOCIATES Suite 120 838 W. Long Lake Road Bloomfield Hills, MI 48302		07/12/2007	EXAMINER LUND, JEFFRIE ROBERT	
			ART UNIT 1763	PAPER NUMBER
			MAIL DATE 07/12/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/656,586	Applicant(s) HUANG ET AL.	
	Examiner Jeffrie R. Lund	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5 and 21-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5 and 21-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 2, 21-28, and 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al, US Patent Application Publication 2002/0000197, in view of Ohta, US Patent 4,526,132.

Masuda et al teaches a processing apparatus 1 that includes a process chamber 16 having a vertical chamber wall defining a chamber interior 14, a showerhead 12 having a lateral surface engaging the chamber wall provided in the process chamber. (Entire document)

Masuda et al differs from the present invention in that Masuda et al does not

Art Unit: 1763

teach the showerhead is held by a plurality of lateral fasteners with a fastener head and threaded shank, the fasteners structurally isolated from the chamber interior.

Ohta teaches supporting a gas source 37 with a plurality of lateral screws 52, structurally isolated from the chamber. (Figure 3)

The motivation for attaching the showerhead of Masuda et al with the lateral screws of Ohta, through the chamber wall into the showerhead, is to provide a means of mounting the showerhead of Masuda et al as required by Masuda et al but not described.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to attach the showerhead of Masuda et al using a plurality of lateral screws as taught by Ohta.

4. Claims 3, 5, 29, 30, 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al US Patent Application Publication 2002/0000197, and Ohta, US Patent 4,526,132, as applied to claims 1, 2, 21-28, and 31-34 above, and further in view of Lilleland et al, US Patent 6,073,577.

Masuda et al and Ohta differ from the present invention in that they do not teach a gas mixing plate and confinement ring.

Lilleland et al teaches an apparatus that includes: a showerhead 14 with a gas mix plate 22; and a confinement ring 17. (Figure 1, column 2 line 22 through column 3 line 14)

The motivation for adding a mixing plate and confinement ring of Lilleland et al to the apparatus of Masuda et al and Ohta is to more uniformly distribute the processing

Art Unit: 1763

gas.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the gas mining plate and confinement ring of Lilleland et al to the apparatus of Masuda et al and Ohta.

5. Claims 1, 2, 21-28, and 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al, US Patent Application Publication 2002/0000197, in view of Graves, US Patent 4,331,352, and Ohta, US Patent 4,526,132.

Masuda et al teaches a processing apparatus 1 that includes a process chamber 16 having a vertical chamber wall defining a chamber interior 14, a showerhead 12 having a lateral surface engaging the chamber wall provided in the process chamber.

(Entire document)

Masuda et al differs from the present invention in that Masuda et al does not teach the showerhead is held by a plurality of lateral fasteners with a fastener head and threaded shank, the fasteners structurally isolated from the chamber interior.

Graves teaches a chamber wall 30b and an interior part 28b having a lateral surface engaging the chamber wall 30b, and attaching interior part 28b to the chamber 30b with lateral screws having a fastener head that engages the outer surface of the chamber and a threaded shank that pass through the chamber wall and into a threaded opening in the interior part 28b. (Figure 5)

Ohta teaches supporting a gas source 37 with a plurality of lateral screws 52, structurally isolated from the chamber. (Figure 3)

The motivation for attaching the showerhead of Masuda et al with the lateral

Art Unit: 1763

screws of Graves is to provide a means of mounting the showerhead of Masuda et al (i.e. an interior part having a lateral surface engaging the chamber wall) as required by Masuda et al but not described.

The motivation for using a plurality of fasteners as taught by Ohta is to securely attach the showerhead of Masuda et al to the chamber wall.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to attach the showerhead of Masuda et al using a plurality of lateral fasteners as taught by Graves and Ohta.

6. Claims 3, 5, 29, 30, 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al, Graves, and Ohta, as applied to claims 1, 2, 21-28, and 31-34 above, and further in view of Lilleland et al, US Patent 6,073,577.

Masuda et al, Graves, and Ohta differ from the present invention in that they do not teach a gas mixing plate and confinement ring.

Lilleland et al teaches an apparatus that includes: a showerhead 14 with a gas mix plate 22; and a confinement ring 17. (Figure 1, column 2 line 22 through column 3 line 14)

The motivation for adding a mixing plate and confinement ring of Lilleland et al to the apparatus of Masuda et al, Graves, and Ohta is to more uniformly distribute the processing gas.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the gas mixing plate and confinement ring of Lilleland et al to the apparatus of Masuda et al, Graves, and Ohta.

Response to Arguments

7. Applicant's arguments filed April 13, 2007 have been fully considered but they are not persuasive.

In regard to the argument that:

Masuda et al. nowhere suggests or discloses how the showerhead 12 is installed. Masuda et al. nowhere describes that the showerhead engages the chamber wall. One of ordinary skill in the art would not assume or conclude from the schematic shown in Masuda et al. that the showerhead engages the chamber wall.

The Examiner disagrees. It is true that Masuda et al does not disclose how the showerhead 12 is installed. Masuda et al clearly shows that the showerhead engages the chamber wall in figures 1-5, 7-10 and 16. Furthermore, Masuda et al also teaches that the gas flows from the gas storage chamber 18 through the small holes of the shower plate 12 and sprayed into the reactor chamber. If the showerhead did not engage the wall gas would also flow from the gas storage chamber 18 around the edges of the showerhead and into the reactor chamber. Therefore, one of ordinary skill in the art, reading the drawings and teachings of Masuda et al, would conclude that the showerhead engages the chamber wall so that the gas is supplied only from the holes of the showerhead.

In regard to the argument that:

Ohta discloses a discharger 37 mounted on a flange 39 (see Figure 2, 3 and 4) where holes 51 are provided so that a screwing bolt 52 can be screwed through the hole (col 3, lines 55-60; col 4; lines 12-23), i.e., the bolt 52 does not extend through the chamber wall (see Figure 3)

Thus, even assuming arguendo, a proper motivation for combining the teachings of Ohta and Masuda et al., attaching the showerhead of Masuda et al. with the flange bolts and holes of Ohta would not produce Applicants invention. It is noted that there is no suggestion that the flange and bolts of Ohta could be successfully used to mount the showerhead of Masuda et al.

The Examiner disagrees. Ohta teaches at its most basic level that two parts can be

Art Unit: 1763

connected together by passing a screw through an outer piece into an inner piece. Thus applying this clear teaching of Ohta to Masuda et al, one of ordinary skill in the art would know to pass a screw through the chamber wall and into the showerhead to secure the showerhead of Matsuda et al as taught by Ohta. The idea of attaching two parts with a screw is prima facie obvious.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

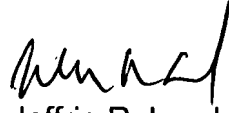
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrie R. Lund whose telephone number is (571) 272-1437. The examiner can normally be reached on Monday-Thursday (10:00 am - 9:00 pm).

Art Unit: 1763

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jeffrie R. Lund
Primary Examiner
Art Unit 1763

JRL
7/7/07